

Claims

1. An apparatus comprising a wall with an aperture in it, wherein at least on
taper detection conductor path is embedded in said wall around the aperture for
5 detection of widening of the aperture.
2. An apparatus according to claim 1, wherein said wall is a wall of an anti-
tamper enclosure having at least one tamper detection conductive path embedded
therein, an electronic circuit is located within the enclosure and object receiving
10 means, within the enclosure, is aligned with the aperture, the aperture being
configured to allow insertion of an object for which the object receiving means is
configured.
3. An apparatus according to claim 2, wherein the object receiving means
15 serves as an anti-probing barrier behind the aperture preventing access to said
electronic circuit.
4. An apparatus according claim 2 or 3, wherein the aperture is configured for
endways insertion of a credit card and the object receiving means is a chip card
20 contact module.
5. An apparatus according to claim 2, 3 or 4, wherein the conductive path or
paths extend across the whole of the enclosure such that cutting through the
enclosure, to make electrical contact with the circuit, without breaking or grounding
25 an embedded conductive path is substantially impracticable.
6. An apparatus according to any preceding claim, wherein the conductive path
or paths are arranged in a plurality of layers such that conductors in different layers
are offset relative to each other.
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7. An apparatus according to any preceding claim, wherein the enclosure is
assembled from a plurality of printed circuit boards.

8. An apparatus according to claim 7, wherein a plurality of said printed circuit boards are electrically connected.
9. An apparatus according to claim 7 or 8, wherein a plurality of said printed
5 circuit boards are connected by an interlocking mechanical joint.
10. An apparatus according to any preceding claim, wherein the electronic circuit comprises means for feeding current through each conductive path and detecting disturbances thereof.
- 10 11. An apparatus according to any preceding claim, wherein the electronic circuit comprises a multi-layer printed circuit board having a first face on which components are mounted, a second face on which no components are mounted.
- 15 12. An apparatus according to claim 11, wherein the conductors carrying signals between said components are separated from the second face by a tamper detection conductive path.
13. An apparatus comprising a housing member and an enclosure fixed in the
20 housing member by a potting material, wherein the enclosure includes holes into which the potting material extends.
14. An apparatus according to claim 13, wherein the enclosure has an opening on one side and the opening is covered by a housing member.
- 25 15. An apparatus according to claim 14, wherein the holes are provided around the rim of the opening.
16. An apparatus according to claim 13 or 14, wherein the housing member
30 includes a channel receiving at least part of the rim of the opening.
17. An apparatus according to any one of claims 13 to 16, wherein the holes are through holes.

18. An apparatus comprising;
a first housing shell having holes;
a second housing shell press-fitted to the first shell; and
5 a keypad membrane located in the first shell such that its keys extend
through said holes,
wherein a wall is provided in the first or second shell to form a barrier
between the seam between the shells and the membrane.
- 10 19. An apparatus according to claims 16 or 17 and claim 18, wherein said wall
comprises a side of said channel.
20. A chip card contact module comprising a plurality of conductors leading
from respective contacts, wherein none of the conductors leads from a contact in a
15 direction opposite to any other.
21. A chip card contact module according to claim 20, having a card input side
into which a card can be inserted for reading, wherein none of said conductors leads
from a contact towards the card input side.
- 20 22. A chip card contact module according to claim 21, wherein the contacts are
arranged in two rows comprising a front row and a back row, the front row being
nearer the card input side than is the back row.
- 25 23. A chip card contact module according to claim 22, wherein the conductors
from the back row lead directly away from the card input side and the conductors
from the front row diverge and then lead directly away from the card input slot.
- 30 24. A card reader comprising an apparatus according to any one of claims 2 to 5,
wherein the object receiving means comprises a chip card contact module according
to any one of claims 20 to 23.

25. A keypad comprising a flexible membrane overlying a circuit board, the flexible membrane having a first set of conductive elements for connecting tracks on the circuit board so as to form push to make switches and a second set of conductive elements connecting tracks on the circuit board.

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26. A keypad according to claim 25, wherein the conductive elements of the first set are located in respective recesses aligned with respective buttons.

27. A keypad according to claim 26, wherein the conductive elements of the
10 second set of located outside of said recesses.

28. An apparatus including a keypad, according to any one of claims 25, 26 or 27, and means for passing current through the second set of conductive elements and means for detecting an interruption of current through the second set of
15 conductive elements to produce a tamper condition indicating signal.

29. An apparatus according to claims 18 and 28.

30. A card reader according to claim 28 or 29.
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31. An apparatus substantially as hereinbefore described with reference to the accompanying drawings.